Module 3

Regulatory requirements for Land Disturbing Activities

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Module 3a

Overview

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ESC Regulations Overview

1990
- First Adopted

1995
- Revised

2012
- Integration Bill (House Bill 1065)
- Aligned with VSMP Law and Regulations

2013
- DEQ Move & re-codification

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Minimum Standards

- **Provide better understanding between the inspector, plan reviewer, and program administrator.**

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ESC Regulations

- **Intended to be used as a clear-cut system to provide uniformity in the application of E&S standards on plans and in the field.**
- **Help to make enforcement more consistent statewide.**

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Purpose of the Minimum Standards

"The intent of this chapter is to establish the framework for compliance with the Act while at the same time providing flexibility for innovative solutions to erosion and sediment control concerns"

Scope and Applicability

- VESCPs
- Plans Submitted to DEQ
- Linear Projects
- State Agencies with Annual Specifications
- Federal Agencies
- State Institutions of Higher Learning

Module 3b

Minimum Standards 1-18

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MS-1 Stabilization

Not at Final Grade

- Stabilize in 14 days
  - Temporary seeding + Mulch
  - Mulch
  - Permanent stabilization if dormant > 1 year

At Final Grade

- Stabilize in 7 days
  - Permanent or Temporary Seeding + Mulch
  - Mulch

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MS-2 Stockpiles and borrow areas

- Soil stockpiles and borrow areas shall be stabilized or protected with sediment trapping measures
- Applies to on and off-site stockpiles and borrow areas

MS-3 Permanent Vegetation

- A permanent vegetative cover shall be established on areas not otherwise stabilized
- Permanent vegetation shall not be considered established until it is uniform, mature enough to survive and will inhibit erosion

MS-4 First Step Measures (Perimeter controls)

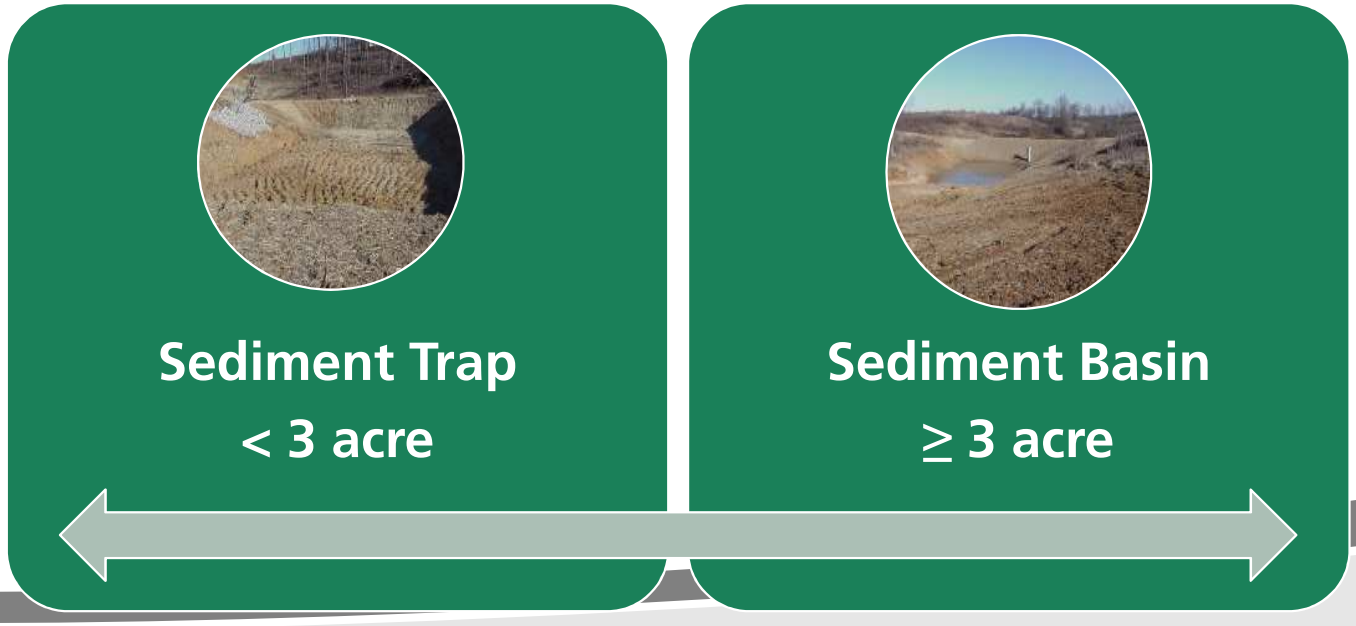
- Sediment basins, traps, dikes and sediment barriers intended to trap sediment shall be installed as a first step measure
- They must be made functional before up-slope disturbance takes place

MS-5 Earthen structures

- **Stabilization measures shall be applied to earthen structures immediately after installation**

MS-6 (Traps and basins)

Sediment traps and sediment basins shall be designed and constructed based on the total *drainage area* served by the trap or basin



MS-7 Cut and fill slopes

- Cut and fill slopes shall be designed and constructed in a manner to minimize erosion
- Slopes found to be eroding excessively within one year shall have additional stabilization applied

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MS-8 Concentrated runoff on slopes

Concentrated runoff shall not flow down cut or fill slopes unless contained in a temporary or permanent channel, flume or pipe

MS-9 Water seeps

Whenever water seeps from a slope face, adequate drainage or other protection shall be applied

MS-10 Inlet protection

All storm sewer inlets made operational during construction shall be protected so that sediment laden water cannot enter without first being filtered or treated to remove sediment

MS-11 Outlet protection

Before newly constructed stormwater channels or pipes are made operational, adequate outlet protection, and any temporary or permanent channel lining shall be installed

MS-12 (Working in a live watercourse)

- When working in a live watercourse, precautions shall be made to minimize encroachment
- Non-erodible materials shall be used
- Earthen fill may be used if armored by non-erodible materials

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MS-13 Stream crossings

When a live watercourse must be crossed by construction vehicles more than twice in a six month period, a temporary stream crossing shall be provided

MS-14 Other applicable regulations

All applicable federal, state and local regulations pertaining to working in watercourses shall be met

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MS-15 Stream bank stabilization

The bed and banks of a watercourse shall be stabilized immediately after work in the watercourse is complete

MS-16 Underground utility lines

Underground utility lines shall be installed in accordance with the following standards in addition to other applicable criteria:

- **No more than 500 feet of open trench at one time**
- **Excavated material shall be placed on the up-hill side of the trench**

MS-16 Utility Construction

- Effluent from de-watering shall be filtered or passed through an approved sediment trapping device
- Material used for backfilling shall be compacted to minimize erosion
- Re-stabilization shall be accomplished in accordance with these regulations
- Applicable safety regulations shall be complied with

MS-17 Construction entrance

Where construction vehicle access routes intersect public or paved roads, provisions shall be made to minimize transport of sediment onto the paved surface

MS-17 Construction entrance

When sediment is deposited on the road surface, it shall be removed by:

- **Shoveling & sweeping**
- **Then disposal**

Street washing is only done after shoveling and sweeping

Applies to single family dwelling lots !

MS-18 Control Removal

All temporary erosion and sediment control measures shall be removed within 30 days of final stabilization or when no longer needed

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MS-19

Continuing downstream adverse effects from increased runoff volume and velocity.

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MS-19

What you should know…

Natural Channel	• 2-year storm cannot overtop channel banks nor erode channel bed or banks
Man-Made Channel	• 10-year storm cannot overtop channel banks • 2-year storm cannot errode bed or banks
Stormwater Infrastructure (pipes)	• 10-year storm must be contained within pipe or system

MS-19

What you should know…

★**Remember: For ESC plans approved on and after July 1, 2014, designs must use the flow rate capacity and velocity requirements of the stormwater management regulations to satisfy compliance with the water quantity requirements in the Stormwater Management Act (§ 62.1-44.15:24 et seq.) and attendant regulations, unless such land-disturbing activities are in accordance with the grandfathering provisions of the Virginia Stormwater Management Program (VSMP) Regulation (9VAC25-870-48). In other words, grandfathered projects will need to meet the Part II C requirements or MS-19.**

MS-19

What you should know…

On and after July 1, 2014, projects subject to the Virginia Stormwater Management Act must meet the water quality and quantity requirements in Part II B of the Virginia Stormwater Management Program (VSMP) Regulation (9VAC25-870-62).

MS-19-Revised

(l.) For projects approved before July 1, 2014, if they can comply with the SWM "energy balance equation" in the stormwater regulations you satisfy MS-19

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MS-19-Revised

(m.) Projects approved after July 1, 2014, must comply with the Virginia Stormwater Management Act including the Grandfathering provisions.

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MS-19-Revised

(n.) Meeting the requirements of the Virginia Stormwater Management Act satisfies MS-19.

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SWM Regulation Requirements

Designers to demonstrate that the energy or the post developed discharge rates of a LDA provide channel protection by use of the “Energy Balance” method.

The Energy Balance method is intended to achieve a balance between the “energy” exerted on the stream by the pre- and post-developed peak discharge.

Energy balance equation (9VAC25-870-66)

$$Q_{post} \leq I.F. \times (Q_{pre} \times RV_{pre})/RV_{post} \quad \text{or}$$

$$(Q_{post} \times RV_{post}) \leq I.F. \times (Q_{pre} \times RV_{pre})$$

Where

- Q_{pre} =Pre-development peak flow rate (cfs)
- RV_{pre} = Pre-development runoff volume (in.)
- Q_{post} = Post-development peak flow rate (cfs)
- RV_{post} = Post development runoff volume (in.)
- I.F. = Improvement factor (0.8 for sites>1 acre, 0.9 for sites < 1 acre

Non-Proprietary Stormwater Management BMPs

#	Practice	#	Practice
1	Rooftop Disconnection	11	Wet Swale
2	Sheetflow to vegetated filter or open space	12	Filtering Practice
3	Grass Channel	13	Constructed Wetland
4	Soil Amendments	14	Wet Pond
5	Vegetated Roof	15	Extended Detention Pond
6	Rainwater Harvesting		
7	Permeable Pavement		
8	Infiltration		
9	Bioretention		
9	Urban Bioretention		
10	Dry Swale		

MS-19

How do I know which projects must meet the new SWM Part IIB requirements?

Pages 27 and 28 of your PG contain easy to follow flow charts to determine if a project must meet the Part IIB or Part IIC requirements

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Variance Procedure

Request

- At time of plan submittal
- During construction when field conditions/situations changes
- Must be done in writing
- Cannot be granted for economic reasons (i.e. too expensive)

Review

- 10 days
- After 10 days, it is automatically denied
- Review must be judicious

9VAC-840-80

Criteria for determining land disturbance activity

The program administrator shall determine the validity of a claim of exempt status by a property owner who disturbs 10,000 square feet or more or 2,500 square feet or more in all areas of jurisdictions designated as subject to the Chesapeake Bay Preservation Area Designation and Management Regulations (9VAC25-830). As soon as a nonexempt status is determined, the requirements of the Act shall be immediately enforced.

9VAC-840-80

Criteria for determining land disturbance activity

Should a land-disturbing activity not begin during the 180-day period following plan approval or cease for more than 180 days, the VESCP authority may evaluate the existing approved erosion and sediment control plan to determine whether the plan still satisfies local and state erosion and sediment control criteria and to verify that all design factors are still valid. If the VESCP authority finds the previously filed plan to be inadequate, a modified plan shall be submitted and approved prior to the resumption of land-disturbing activity.

End of Module 3

QUESTIONS?

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